

12.

(Four Times Amended) A virtual image generation apparatus which

generates images observed from a viewpoint to be displayed on a monitor, the images including an operator-controlled object moving relative to virtual terrain objects, the operator-controlled object and the terrain objects being defined within a three-dimensional virtual space, the virtual generation apparatus comprising:

shape data memory which stores shape data defining shapes of the terrain objects present in the virtual space;

position specification means which specifies position of the operator-controlled object with respect to the terrain objects;

overlap determination means which determines, on the basis of the shape data and the position data, whether or not a terrain object is located between the viewpoint and the operator-controlled object; and

image generation means which generates image data for displaying on a monitor screen the operator-controlled object and the terrain objects viewed from the viewpoint, wherein a terrain object is processed so as to be displayed as a show-through image generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern through which the operator-controlled object can be viewed in the event that the overlap determination means determines that the operator-controlled object is located behind the terrain object when viewed from the viewpoint, and wherein the terrain object is processed so as to be displayed as a non-show-through image in the event that both the operator-controlled object and the terrain object are viewed without a prescribed overlapping state from the viewpoint.

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7. (Three Times Amended) A virtual image generation apparatus which generates images observed from a viewpoint to be displayed on a monitor, the images including an operator-controlled object moving relative to virtual terrain objects, the operator-controlled object and the terrain objects being defined within a three-dimensional virtual space, the virtual generation apparatus comprising:

shape data memory which stores shape data defining shapes of the terrain objects present in the virtual space;

position specification means which specifies position of the operator-controlled object with respect to the terrain objects;

overlap determination means which determines, on the basis of the shape data and the position data, whether or not a terrain object is located between the viewpoint and the operator-controlled object; and

image generation means which generates image data for displaying on a monitor screen the operator-controlled object and the terrain objects viewed from the viewpoint, wherein a terrain object is processed so as to be displayed as a show-through image generated by displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a mesh form pattern with an alternating sequence of pixels for displaying the terrain object and pixels for displaying the operator-controlled object and through which the operator-controlled object can be viewed in the event that the overlap determination means determines that the operator-controlled object is located behind the terrain object when viewed from the viewpoint, and wherein the terrain object is processed so as to be displayed as a non-show-

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through image in the event that both the operator-controlled object and the terrain object are viewed without a prescribed overlapping state from the viewpoint.

8. (Three Times Amended) A virtual image generation method which generates images observed from a viewpoint to be displayed on a monitor, the images including an operator-controlled object moving relative to virtual terrain objects, the operator-controlled object and the terrain objects being defined within a three-dimensional virtual space, the method comprising the steps of:

storing shape data defining shapes of the terrain objects;

computing the position of the operator-controlled object with respect to the terrain objects;

determining, on the basis of the shape data and the position data, for the operator-controlled object, whether a terrain object is located between the viewpoint and the operator-controlled object in an overlapping state when viewed from the viewpoint; and

generating image data for displaying on the monitor the operator-controlled object and the terrain objects viewed from the viewpoint, in which a terrain object in an overlapping state is processed so as to be displayed as a show-through image generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern through which the operator controlled object can be viewed in the event that the terrain object is located between the viewpoint and the operator-controlled object in an overlapping state

when viewed from the viewpoint, and in which a terrain object disposed in a state other than the overlapping state is displayed as a non-show-through image.

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(Three Times Amended) An information storing medium for use with a virtual image generation apparatus which generates images observed from a viewpoint to be displayed on a monitor, the images including an operator-controlled object moving relative to virtual terrain objects, the operator-controlled object and the terrain objects being defined within a three-dimensional virtual space, the information storing medium storing a program which executes the steps of:

supplying shape data defining shapes of objects to be displayed;

computing position of the operator-controlled object with respect to the terrain objects;

determining, on the basis of the shape data relating to the terrain objects present in the virtual space and the position data, for the operator-controlled object, whether any of the terrain objects is located between the viewpoint and the operator-controlled object in an overlapping state when viewed from the viewpoint; and

generating image data for displaying on the monitor the operator-controlled object and the terrain objects viewed from the viewpoint, in which any terrain object in an overlapping state is processed so as to be displayed as a show-through image generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern through which the operator controlled object can be viewed in the event that the terrain object is located between the viewpoint and the operator-controlled object in an overlapping state when viewed from the viewpoint, and in which any of the terrain objects disposed in a state other than the overlapping state is displayed as a non-show-through image.

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(Three Times Amended) A game device which generates images

observed from a viewpoint to be displayed on a monitor, the images including a player-controlled object moving relative to virtual terrain objects, the player-controlled object and the terrain objects being defined within a three-dimensional virtual space, the game device comprising:

an input means with which a game player operates a computer game;

shape data memory which stores shape data defining shapes of the terrain objects present in the virtual space;

a position data specifier which specifies a current position for the player-controlled object with respect to the terrain objects;

overlap determination means which determines, on the basis of the shape data and the position data, whether or not a terrain object is located between the viewpoint and the player-controlled object; and

an image generator which generates image data for displaying on the monitor screen the player-controlled object and the terrain objects viewed from the viewpoint wherein a terrain object is processed so as to be displayed as a show-through image generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern through which the player-controlled object is viewed in the event that the overlap determiner determines that the player-controlled object is located behind the terrain object in an overlapping state when viewed from the viewpoint, and wherein a terrain object is displayed without such show-through image effect in the event that the player-controlled object and the terrain object are disposed in a state other than the overlapping state.

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~~18~~ 25. (Twice Amended) A computer system comprising a graphic image processor wherein various objects are defined in a three-dimensional virtual space and programs are executed in response to an operator's instruction so that an operator-controlled object moves against a terrain composed of terrain objects defined in the three-dimensional virtual space and images of the operator controlled object and the terrain objects viewed from at least one viewpoint are generated for displaying on a monitor, the computer system comprising:

an input means which is manually controlled by an operator, the image of the operator-controlled object moves in response to the operators' control with the input means;

shape data memory stored with shape data for objects; and

processing means for generating images of the operator-controlled object and the terrain objects for displaying on the monitor,

wherein the processing means determines positions of the operator-controlled object with respect to the terrain objects and, in the event that a terrain object is located between the viewpoint and the operator-controlled object in the three-dimensional virtual space when viewed from the viewpoint, generates a portion of the terrain object overlapping with the operator-controlled object with a show-through image effect generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern.

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(Twice Amended) A computer system defining various objects in a three-dimensional virtual space and executing programs that respond to an operator's instruction so that a operator-controlled object moves against a terrain composed of terrain objects defined in the three-dimensional virtual space and images of such objects viewed from a viewpoint are generated for displaying on a monitor, the computer system comprising:

an input means which is manually controlled by an operator, the image of the operator-controlled object moving in response to the operators' control with the input means; and

processing means for generating images of the operator-controlled object and the terrain objects for displaying on a monitor,

wherein the processing means determines positions of the operator-controlled object with respect to the terrain objects and, in the event that a terrain object is located between the viewpoint and the operator-controlled object in the three-dimensional virtual space when viewed from the viewpoint, generates a portion of the terrain object overlapping with the operator-controlled object with a show-through image effect generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern.

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21 ~~20~~ (Twice Amended) A method of generating images on a computer system, the computer system defining objects in a three-dimensional virtual space, the objects including an operator-controlled object and a terrain composed of terrain objects, and wherein the computer system generates images of the objects viewed from a viewpoint for displaying on a monitor, the method comprising the steps of:

receiving signals from an input means controlled by an operator;

processing the signals so that operator-controlled object moves relative to their terrain objects in response to the signals;

determining the positions of the operator controlled object with respect to the terrain;

generating images of the operator-controlled object and the terrain objects viewed from the viewpoint for displaying on the monitor,

wherein, in the event that a terrain object is located between the viewpoint and the operator-controlled object in the three dimensional virtual space when viewed from the viewpoint, a portion of the terrain object overlapping with the operator controlled object is generated with a show-through effect generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern.

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30. (Twice Amended) An information storing medium for use with a computer system defining objects in a three-dimensional virtual space, the objects including an operator-controlled object and a terrain composed of terrain objects, and wherein the computer system generates images of the objects viewed from a viewpoint for displaying on a monitor, the medium storing a program which executes the steps of:

- receiving signals from an input means controlled by an operator;
- processing the signals so that operator-controlled object moves relative to their terrain objects in response to the signals;
- determining positions of the operator controlled object with respect to the terrain objects; and
- generating images of the operator-controlled object and the terrain objects viewed from the viewpoint for displaying on the monitor,

wherein, in the event that a terrain object is located between the viewpoint and the operator-controlled object in the three dimensional virtual space when viewed from the viewpoint, a portion of the terrain object overlapping with the operator controlled object is generated with a show-through effect generated by alternately displaying pixels indicative of the terrain object and pixels indicative of the operator-controlled object in a prescribed pattern.

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31. (Once Amended) A virtual image generation apparatus comprising:

shape data memory which stores data defining shapes of a plurality of terrain objects within a three-dimensional virtual space;

position specification means which specifies a position of an operator-controlled object within the virtual space;

overlap determination means which determines whether a terrain object is located between a viewpoint and the operator-controlled object;

first image generation means which generates image data for the operator-controlled object and the plurality of terrain objects as viewed from the viewpoint; and

second image generation means which generates image data for the operator-controlled object and the terrain objects comprising alternately generating pixels indicative of at least one terrain object and indicative of the operator-controlled object in a prescribed pattern if the overlap determination means determines that the operator-controlled object is located behind the at least one terrain object when viewed from the viewpoint.

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32. (Once Amended) A virtual image generation method comprising the steps of:

storing data defining shapes of a plurality of terrain objects within a three-dimensional virtual space;

computing the position of an operator-controlled object within the virtual space;

determining whether a terrain object is located between a viewpoint and the operator-controlled object; and

generating image data for the operator-controlled object and the plurality of terrain objects as viewed from the viewpoint;

wherein generating image data for the operator-controlled object and at least one terrain object comprises alternately generating pixels indicative of the at least one terrain object and indicative of the operator-controlled object in a prescribed pattern if the operator-controlled object is located behind the at least one terrain object when viewed from the viewpoint.

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33. (Once Amended) An information storing medium storing a program which executes the steps of:

storing data defining shapes of a plurality of terrain objects within a three-dimensional virtual space;

computing the position of an operator-controlled object within the virtual space;

determining whether a terrain object is located between a viewpoint and the operator-controlled object; and

generating image data for the operator-controlled object and the terrain objects as viewed from the viewpoint;

wherein generating image data for the operator-controlled object and at least one terrain object comprises alternately generating pixels indicative of the at least one terrain object and indicative of the operator-controlled object in a prescribed pattern if the operator-controlled object is located behind the at least one terrain object when viewed from the viewpoint.

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34. (Once Amended) A computer system comprising:

an input means for operating an operator-controlled object;

first generating means for generating image data of the operator-controlled object and a plurality of terrain objects from a plurality of viewpoints,

processing means for determining the position of the operator-controlled object with respect to the plurality of terrain objects as viewed from a viewpoint; and

second generating means for generating image data for the operator-controlled object and the terrain objects comprising alternately generating pixels indicative of at least one terrain object and indicative of the operator-controlled object in a prescribed pattern if the operator-controlled object is located behind the at least one terrain object when viewed from the viewpoint.

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35. (Once Amended) A game device comprising:

a controller for operating a player-controlled object;

a shape data memory which stores data defining shapes of a plurality of terrain objects present in a three-dimensional virtual space;

a position data specifier which specifies a current position for the player-controlled object within the virtual space;

an overlap determination processor which determines whether a terrain object is located between a viewpoint and the player-controlled object; and

an image generator which generates image data for the player-controlled object and the terrain objects as viewed from the viewpoint and image data for the player-controlled object and the terrain object comprising alternately generating pixels indicative of at least one terrain object and indicative of the player-controlled object in a prescribed pattern if the overlap determination processor determines that the player-controlled object is located behind the at least one terrain object when viewed from the viewpoint.

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